

# $\alpha$ ZEE, $\beta$ ZEE, $\gamma$ ZEE SUGATO HIGGS BOSON PARTICLES IN SPONTANEOUS SYMMETRY POLE BREAKING

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## ABSTRACT

*The beginning of history stated 1960 where Nambu 'spontaneous' comes out the breaking symmetry with the external force. In the case of SSPB with the dimensional invariant Lie rotational generator will null set generator with have a acquire masses with Sugato-Higgs-Boson model. However it will have to be signature of  $\alpha, \beta, \gamma$  zee Sugato – Higgs- Boson particles discusses in this paper.*

**KEYWORDS:** Lie Algebra,  $\alpha$ zee Sugato – Higgs – Boson,  $\beta$  zee Sugato – Higgs – Boson,  $\gamma$  zee Sugato – Higgs- Boson

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## INTRODUCTION

In the Standard Model of particle physics [1-4] the Higgs mechanism is the tool of skeleton. The SSPB [5] will be degenerated for SM of Sugato-Higgs-Boson for generates Sugato-Higgs Boson clone and zee- Sugato – Higgs –Boson Particles. It has annihilated for rotational Lie generator for mathematical tools with develop the theory for gauge, fermion and its intangible electro weak interaction for Sugato-Higgs Boson mechanism for degenerated its invariant  $\alpha$  zee,  $\beta$  zee,  $\gamma$  zee Sugato-Higgs Boson particles.

## Mathematical Development Lie Algebra for Rotational Invariant

The symmetry generates with the SM from Lie algebra or Lie group SM of Higgs mechanism. The SM for newly developing theory of Sugato-Higgs-Boson clone atom and its mimic is Zee Sugato-Higgs –Boson with the standard model with the rotational Lie group [6]. The development for these mathematics are to be generated with the function of  $g(x)$  as a continuous function with the invariant  $a \leq x \leq b$  with the set point  $x$  interaction to the interval and in such that there exists a  $\xi$  lying to the right of  $x$  with  $g(\xi) > g(x)$ . As from the special Linear Lie algebra

$$A_n: S l_{n+1}$$

and the odd-dimensional special orthogonal Lie algebra

$$B_n: S O_{2n+1}$$

and the symplectic Lie algebra

$$C_n: S P_{2n}$$

and the even dimensional special orthogonal Lie algebra

$$D_n : S O_{2n}$$

These lie algebras are numbered so that  $n$  is the rank.

Except certain exceptions in low dimension, many of these are simple Lie algebra, which are a fortiori semi simple. Every, semi-simple Lie algebra over an algebraically closed field is a direct sum of simple Lie algebras, and the finite dimensional simple Lie algebras fall in four  $A_n$ ,  $B_n$ ,  $C_n$ , and  $D_n$  with five exceptions  $E_6$ ,  $E_7$ ,  $E_8$ ,  $F_4$  and  $G_2$ . Simple Lie algebras are classified by the connected Dynkin diagrams.

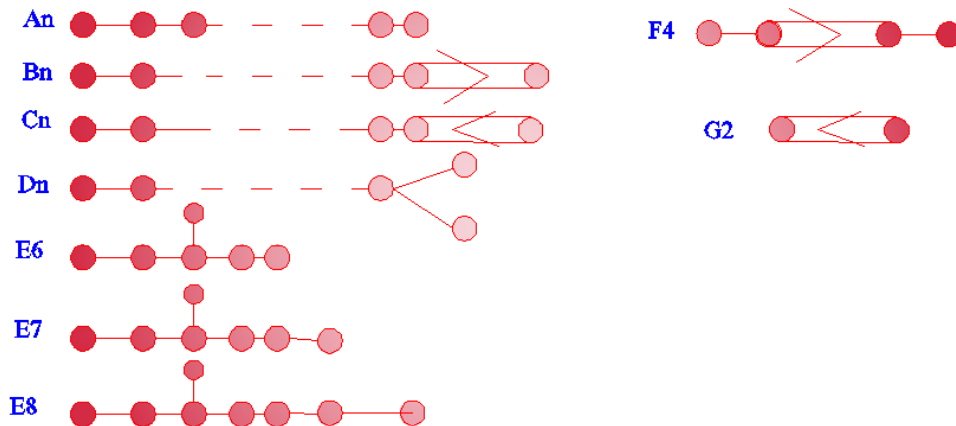


Figure 1

Now recalling function  $g(x)$  with set  $E$  is either empty or an open set, it decompose into a finite number or a denumerable infinity of open and disjoint interval  $(a_k, b_k)$  and

$$g(a_k) \leq g(b_k)$$

for all interval [7].

The functions of Lie function have to be a additional of  $n$ - $q$ - $r$ - $s$ - $t$ - $u$  suffix of set of function of space with the functional distinguished with a conjugative set function  $g(x)$  with suffix integer with a sequences of set have zero finite bounded will have a function  $\tau$  have a complex plane in the same set with the real value function of superposition with vector null set have a giant orthogonal rotation with the same set with either space empty to rotates a space generator or distinguished, the complex  $(i, j, k)$  have a  $(3 \times 6n) < S$  probable set generator with  $6n$  multi rotational function of Lie group generator. The matrix rank within the bounded set have a rotational giant orthogonal with space has a conjugate rotation into the Lie rotational invariant matrix. The generator have Sugato diagram for rotational invariant of Lie group generator.

$g_n$  for special rotation with superposition Lie generator for  $i$  vector

$$g_n: n(n_{i+}, n_{i++}, +II \rightarrow -II^{\sim}) + \tau_{i^{\sim}}$$

it has clock and anti clock symmetry rotational generator in  $i$  vector.

$g_q$  for special orthogonal Lie generator for  $i$  vector

$$g_q: q(n_{i+II} \rightarrow 2n_{i+2II}) \frac{1}{r_n} \left( \frac{\phi_{1i}^2(x) + \phi_{2i}^2}{\phi_{1i}^2 \sim \phi_{2i}^2} \right) + \tau_{i^{\sim} \sim i}$$

where  $\Phi_1(x)$  &  $\Phi_2(x)$  are the rotational closed set with two common bounded circular space.

$g_r$  for special rotation with superposition Lie generator for j vector

$$g_r: r(r_{j+}, r_{j++}, +\Pi \rightarrow -\Pi) + \tau_j$$

it has clock and anti clock symmetry rotational generator in j vector.

$g_s$  for special orthogonal Lie generator for j vector

$$g_s: S(n_j + \Pi \rightarrow 2n_j + 2\Pi) \frac{1}{r_n} \left( \frac{\phi^2_{1j}(x) + \phi^2_{2j}}{\phi^2_{1j} \sim \phi^2_{2j}} \right) + \tau^{\sim} j \sim j$$

$g_t$  for special rotation with superposition Lie generator for k vector

$$g_t: t(n_{k+}, n_{k++}, +\Pi \rightarrow -\Pi) + \tau_k$$

it has clock and anti clock symmetry rotational generator in k vector.

$g_u$  for special orthogonal Lie generator for k vector

$$g_u: U(n_k + \Pi \rightarrow 2n_k + 2\Pi) \frac{1}{r_n} \left( \frac{\phi^2_{1k}(x) + \phi^2_{2k}}{\phi^2_{1k} \sim \phi^2_{2k}} \right) + \tau^{\sim} k \sim k$$

So that the results of expect ion are such as for case of rotational Lie invariant are  $G_{1in}, G_{1jn}, G_{1kn}$ .

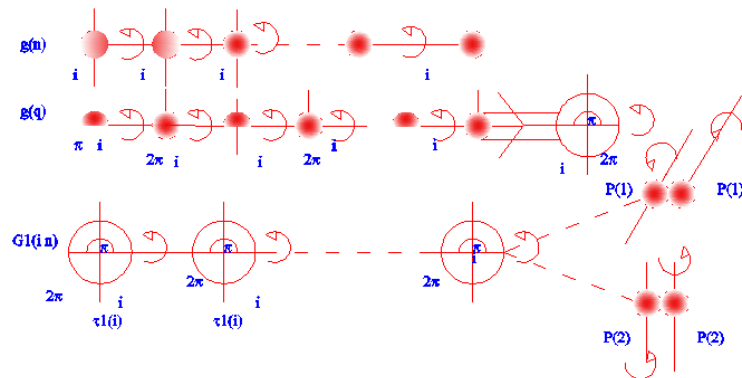


Figure 2: Sugato Diagram

### Gauge Fermion with Coherent Field Magnate

The function D wave into the state rotation of invariant Lie group with the rotational conjugate have a superposition Lie generator into i,j,k vector phase invariant with have  $\tau_i, \tau_j, \tau_k$  complex plane with its integer of rotation of massive mass gauge into the recent development in quantum mechanics spin analog[8] into spin null factor of rotation with gauge fermions with the dimensional effect and these effects with similar to Henbury Brown –twist effect for bosons [9] for fermions[10] have been performed with ultra clod meta stable Helium atoms.

It have to be vector plane of gauge fermion with the coherence of the field rotation with dynamic rotational group Lie with its invariant of its orthogonal Lie generator of its conjugate of ion into the Fermi with the invariant with the coherent neighbour of a symmetry rotation gauge with it Fermi generator have sequence of set null to the coupling of the

degenerate of rotational super symmetry with the paradox of  $A_{\mu+}$ ,  $A_{\mu++}$  with SSPB model of a Ferro Fermi have to a giant rotation of super symmetry have gauge dynamic with have a null to zero have a rotation Sugato diagram with its invariant of symmetry.

The field annihilate of gauge  $(\mu^+)^{\dagger}$  &  $(\mu^{++})^{\dagger}$  have a pair of the generator with have the probability of stability to generate of multi rotation spin chain [13] have an analog with the beneficial of superposition of d wave generator.

In the generator have a signature of invariant of super symmetry of gauge generator with field of super symmetry of gauge generator with field  $\delta_i$  have a plane of super symmetry of x,y,z, real value function with its complex annihilation of  $\tau_i, \tau_j, \tau_k$  set zero with null rotation. The transfer operator is of joint rotation into the giant symmetrical invariant gauge with the sequences of field magnate generator.

### Interstate Superposition of Electroweak Interaction

The particle physics, the electro weak interaction is the unified description of two of the four known fundamental interaction of nature, electromagnetism and the weak interaction. Although these two force appear very different at everyday low energies, the models them as two different aspects of the same force. Glashow, Salam, Weinberg, their contribution to unification of the weak and electromagnetic interaction between elementary physics.[1-3] The existence of the electroweak interaction was experimentally established into the two stages, the first being the discovery of neutral currents in neutrino scattering by the Gargamelle collaboration in 1973, and the second in 1983 by the UA1 and UA2 collaboration that involved the discovery of W and Z gauge boson in proton antiproton collision at the converted super proton synchrotron Hoof and Martians Veltman inventive work on showing that the electroweak theory is renormalizable. Well develop theory the superposition of giant Ferro magnate of SSPB in the SM of Sugato –Higgs Boson will have to a radial interaction of pole generator with the weak interaction in the phase translation of electro weak interaction. The invariant Lie group generator with the possibilities of pseudo Kanons intangible of gauge SU(2) and SU(2') have a pair of anti pair electroweak electro generator [11] have mass body of multi task of rotation kanons with phase symmetry of weak  $I_{\tau_i}, I_{\tau_j}, I_{\tau_k}$  the set generator of vacuum expectation of set zero null rotation of super symmetry of generator with have a orthogonal Lie generator with rotational sequences of i,j,k open set rotation with the integral with the presence science development of spin analog[8] with it invariant dynamic annihilation rotation with kanons phase rotation with acquire mass of superposition of null zero set to open set pseudo kanons rotation to the SM of Sugato-Higgs-Boson will have to be into the Lagrangian Equation(18 ) [12] with the transfer gauge field  $\phi$  and fermions  $\psi$  will have to a set null have a dynamic annihilation with a joint rotation of 0 to  $\Pi$  invariant gauge [13] lie generator. The weak iso-spin vector have a dynamic rotation with Lie generator ortho in i,j,k, vector have to be in SSPB dynamic with have anti-pseudo rotational kanons have to be the superposition into sign up down [13] fermion with have a phase generator of zero gauge weak iso-spin electro weak interaction. The superposition have to be Hilbert soft dynamic rotation of d-wave generator with vector R bi-compact [11] locally with superposition of symmetry of SM of Sugato Higgs Boson. The vacuum expectation where L (Equation 18) [12] in these

$$[L^+]^{\dagger}, [\lambda L^{++}]^{\dagger\dagger} = [N] \lambda L^{\dagger} L^{++} + C_0$$

Where  $\lambda$  is the inter phase of Lagrangian and N in space –time invariant rotation and  $C_0$  in neutral weak rotational current of fermions electric charge. The charge potential in figure-3 for free level Sugato Feynman diagram for with respect to  $\mu^+, \mu^{++}$  and  $\nu^+, \nu^{++}$  [12].

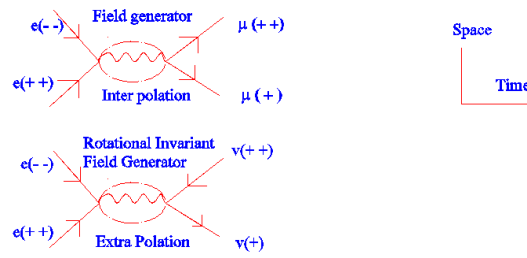


Figure 3: Tree Level Sugato Feynman Diagram

### Electroweak Interaction into Rotational Lie Group Transformation in Spontaneous Symmetry Breaking

The phenomenon of spontaneous symmetry breaking however does not required such an external force, these is where the terms “spontaneous” comes from. In the case of symmetry will have to be full theory with a parity complex gauge  $SU(2) \times U(1)$  and  $SU(2') \times U(1')$  with have eight generator with these gauge boson with the attachment of pair  $T_3$  and  $Y_1$  and  $Y_6$  and  $Y_2$  both the neutral. The Lie rotational generator with have a state generator of weak interaction of electroweak electric charge have to be generate of symmetry of clock and anti-clock symmetry rotation with it invariant the generator  $i, j, k$  vector have a phase symmetry with gauge zero pair electric charge with the integer of interaction of symmetry. The analog spin have to be the giant vector of weak electrolytic with recent development of quantum mechanics [8]. The electric generator have a state generator of  $g_n$  of it orthogonal Lie. It has a anti phase rotation with pseudo generators of invariant rotational Lie with a integral of sequences of chronology  $i, j, k$  complex pseudo kanons with the transformation of  $\tau_i, \tau_j, \tau_k$  rotation of pseudo electrolytic group generator into the electroweak interaction.

### Rotational Gauge Invariant in Spontaneous Symmetry Pole Breaking

The problem quasi dynamic rotation is analogous representation of SSPB pole orientation with the unitary transformation of more general abstract group of Sugato-Abelian [12] group  $R$  which is locally a bicomact topological group. It have to be invariant the pole dynamic with the rotational symmetry with have an analog of anti-pair ion which the generator Fermion with have it generator of invariant gauge have a acquire mass with super symmetry into the group  $g_u, g_q, g_r, g_s, g_t, g_b$  have set into the open invariant with dynamic phase with 0 to  $\Pi$  have a transition with  $R$  have variant pole generator with pseudo rotation with the coupling generator fermion into a gauge dynamic with SM of Sugato-Higgs-Boson quark and lepton is generatively  $Y_{\frac{1}{2}}$  have pole rotation into a extrapolate with the ingredient of  $Y_{\frac{2}{2}}$  with the parity of two pair symmetry Lie rotational phase generator with have acquires masses. The weak pole into the analog spin of  $U(1')$  interaction with the dynamic phase of SSPB model. The interaction of gauge boson into invariant special orthogonal Lie generator with have vector

$$Q_{(n_i + II \rightarrow 2n_i + 2II)} \rightarrow S_{(n_j + II \rightarrow 2n_j + 2II)} \rightarrow U_{(n_k + II \rightarrow 2n_k + 2II)}$$

Have a giant phase with annihilated with dynamic gauge of Lie rotation gauges with  $G_{1in}, G_{1jn}, G_{1kn}$  of  $\alpha, \beta, \gamma$  zee Sugato –Higgs- Boson particles generate.

### Energy Paradox with Masses $\alpha, \beta, \gamma$ zee Sugato –Higgs- Boson

Paradigm of wilczek Nobel lecture comes out from the Einstein’s famous energy equation in quantum physics that  $m = \frac{E}{c^2}$  and does the inertia of a body depend upon the energy content? From the beginning Einstein was thinking about the

origin of mass, not about making bombs. Modern QCD answer Einstein's question with a resounding 'Yes' indeed. The mass of ordinary matter derives almost entirely from energy –the energy of mass less gluons and heavy mass less quarks, which are the ingredients which photons, neutrons, and atomic nuclei are made.

The development of physics in quantum physics that optical geometrical dimension of mass body (M)

$$= \frac{E}{\begin{bmatrix} \tilde{Y}_{xyz} & \tilde{Y}_{yzx} & \tilde{Y}_{zxy} \\ \tilde{Y}_{yzx} & \tilde{Y}_{zxy} & \tilde{Y}_{xyz} \\ \tilde{Y}_{zxy} & \tilde{Y}_{xyz} & \tilde{Y}_{yzx} \end{bmatrix} X \tilde{Y}} \quad [(optical\ zero\ dimension) \alpha \rightarrow (unity\ space)]$$

Form these paradigm does the optical geometrical dimension of mass body M have its analogous with spin generator of optic shadow with pair symmetry of generate invariant into the mass? The answer is 'Yes' it indeed of the SSPB with Sugato-Higgs-Boson model with Lie rotational generator with vector  $i, j, k$  ion mode transformation of it symmetry with the invariant of rotational close set  $\varphi_1(x)$  and  $\varphi_2(x)$  of two common bounded circular space with Lie generator. The radial dimension  $r_n$  of electric charge of electrolysis have to generate with pseudo kanons with rotational gauge and spatial rotation with superposition of Lie generator.

The generator gauge has a colour of mass have to be energy gyration with its optic phase with it analog pair of the rotational invariant. The colour mass generator have Lie with transfer function of mass with vector phase  $i, j, k$  into its invariant generator with ion phase generator of eclectic charge with rotational symmetry. The vector mass  $i, j, k$  have with it optical generator with signature of generate ion particle.

$i \rightarrow \alpha$  zee Sugato –Higgs –Boson

$j \rightarrow \beta$  zee Sugato –Higgs-Boson

$k \rightarrow \gamma$  zee Sugato-Higgs-Boson

in its interpolate generator and into phase 0 to  $\Pi$  rotation into the extrapolate phase with generate  $\alpha$  zee Sugato –Higgs –Boson,  $\beta$  zee Sugato –Higgs-Boson,  $\gamma$  zee Sugato-Higgs-Boson.

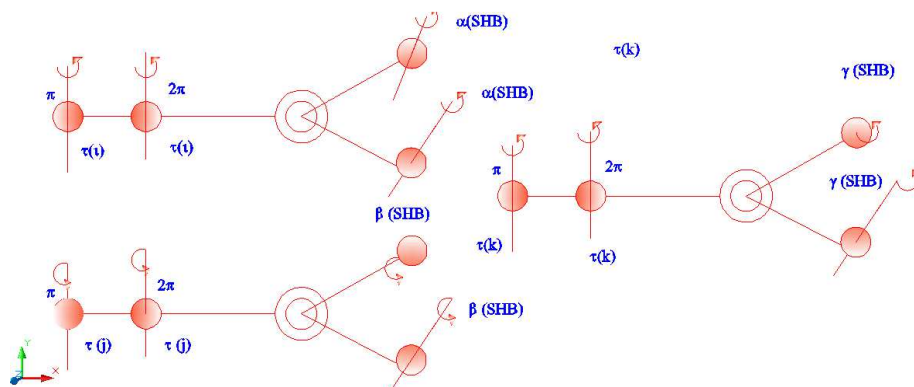
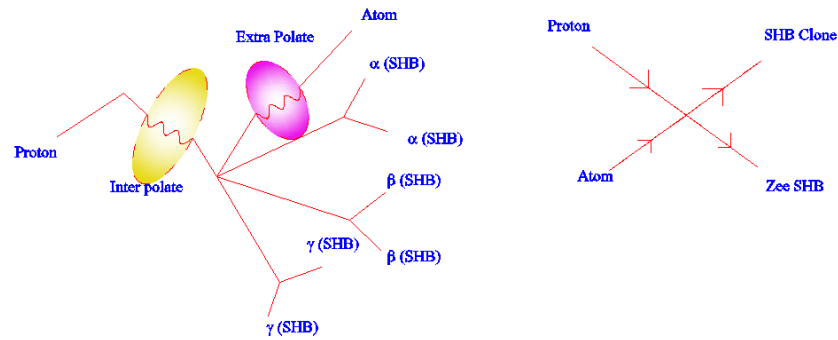


Figure 4



**Figure 5: These Sugato Feynman Schematic Representations of the Fundamental Process of  $\alpha$ ,  $\beta$ ,  $\gamma$  Sugato Higgs Boson and SHB Clone and Zee SHB**

## CONCLUSIONS

The SM of Sugato- Higgs-Boson will be signature with Lie generator with theoretical invariant  $\alpha$  zee Sugato – Higgs –Boson,  $\beta$  zee Sugato –Higgs-Boson,  $\gamma$  zee Sugato-Higgs-Boson.

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